



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/820,440 | 04/05/2004 | James Gardner | 070917 | 7165 |

23696 7590 04/28/2010
QUALCOMM INCORPORATED
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

| |
|----------|
| EXAMINER |
|----------|

TIMORY, KABIR A

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2611

| | |
|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

04/28/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com
kascanla@qualcomm.com
nanm@qualcomm.com

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/820,440 | Applicant(s) GARDNER ET AL. | |
| | Examiner KABIR A. TIMORY | Art Unit 2611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12, 51-54 and 63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-12 is/are allowed.
- 6) ☒ Claim(s) 7, 8, 10, 51, 53, 54 and 63 is/are rejected.
- 7) ☒ Claim(s) 9 and 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request for Continued Examination (RCE) Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/02/2010 has been entered.

Response to Arguments

2. This office action is in response to the amendment filed on 03/02/2010. Claims 7-12, 51-54, and 63 are pending in this application and have been considered below. Claims 1-6, 13-50, and 55-62 are canceled by the applicant.

3. Claims 1-2, 20, and 30 is canceled by the applicant. Thus, the rejection under 35 USC 112 1st paragraph is withdrawn.

4. Claims 11-12 are allowed; therefore, the arguments offered by the applicant with reference to claims 11 are moot.

5. Applicant arguments regarding the rejection under 35 USC 103(e) as being unpatentable over Perahia et al. in view of Thomson, have been fully considered but they **are not persuasive**. The examiner thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meets the claimed limitation as rejected.

Applicant's argument: "As discussed above, Thomson does not describe transmitting information in the out-of-band portion shown in Fig. 4a. Accordingly, Applicant submits that independent claims 7, 10, and 51, and their dependencies, are allowable.

Examiner's response: In claim 7, the applicant does not explicitly disclose **"transmitting information in the out-of-band portion"**. Claim 7 discloses "wherein the modified preamble is distinguishable at a receiver from a conventional 802.11a preamble and includes information in an out-of-band component unused in a conventional 802.11a preamble". In figure 4a, Thomson et al. shown that the preamble includes out-of-band component (3.5 MHZ interpreted to be out-of-band component). This portion is used for preventing interference between channels (par 0006, lines 14-17). Thus, it is obvious that the 3.5 MHz portion of the 20 MHz channel include information for preventing interference between channels.

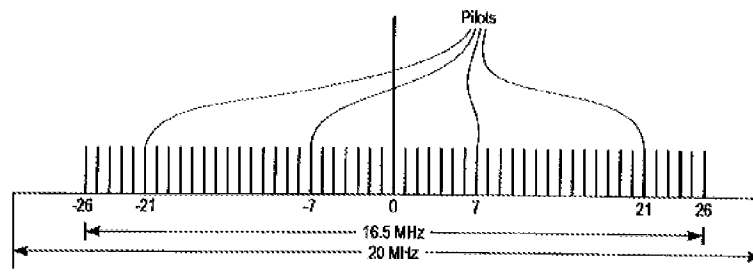


FIG. 4a

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 7-10, 46, and 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perahia et al. (US 7352688) in view of Thomson et al (US 20030058951).**

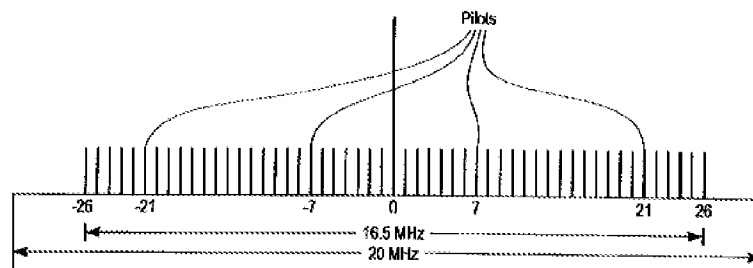


FIG. 4a

Regarding claim 7:

As shown in figures 1-6, Perahia et al. discloses a method of transmitting signals using a plurality of transmit channels, the method comprising:

Art Unit: 2611

- allocating the data to be transmitted among the plurality of transmit channels (**figure 1 shows plurality of transmit antennas. See col 4, lines 11-34**), wherein at least one of the plurality of transmit channels transports some data that is not transmitted over all of the other of the plurality of transmit channels (**col 6, lines 26-29**);
- transmitting a modified preamble (**see figures 5 and 6**) from each of the plurality of transmit channels (**figure 1**), wherein the modified preamble is distinguishable at a receiver from a conventional 802.11a preamble (**col 4, lines 22-34, col 6, lines 22-57**).

Perahia et al. disclose all of the subject matter as described above except for specifically teaching and includes information an out-of-band component unused in a conventional 802.11a preamble.

However, Thomson et al. in the same field of endeavor teach and includes information an out-of-band component (**3.5 MHZ interpreted to be out-of-band component**) (**figures 1b and 4, par 0006, lines 14-17**) unused in a conventional 802.11a preamble (**in par 0013, Thomson et al. disclose that long symbols can be modified between the transmitter and receiver. Thus, it is obvious that preamble representation of figure 4a cab be used as a modified preamble for transmission between a transmitter and receiver. See par 0013 and 0039**). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use out-of-band component (3.5 MHz) as taught by Thomson et al. to modify the system and method of Perahia et al. in order to prevent interference between channels.

Regarding claim 8:

Perahia et al. disclose all of the subject matter as described above except for specifically teaching wherein the plurality of transmit channels comprise a plurality of frequency channels.

However, Thomson et al. in the same field of endeavor teach wherein the plurality of transmit channels comprise a plurality of frequency channels **(figures 1b and 4, par 0006, lines 14-17)**. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use frequency channels (20 MHz) as taught by Thomson et al. to modify the system and method of Perahia et al. in order to transmit information using frequency channels.

Regarding claim 10:

As shown in figures 1-6, Perahia et al. discloses a method of transmitting signals using a plurality of transmit channels, the method comprising:

- allocating the data to be transmitted among the plurality of transmit channels **(figure 1 shows plurality of transmit antennas. See col 4, lines 11-34)**, each transmit channel having a bandwidth corresponding to a legacy communication standard including a portion utilized for data transmission **(col 1, lines 42-49, col 3, lines 50-61)** and, wherein at least one of the plurality of transmit channels transports some data that is not transmitted over all of the other of the plurality of transmit channels **(col 6, lines 26-29)**; and
- for at least one set of at least two adjacent transmit channels, transmitting data over the set wherein at least some data is encoded in out-of-band subcarriers at

frequencies between frequencies allocated to the at least two adjacent transmit channels **(col 4, lines 22-34, col 6, lines 22-57)**.

Perahia et al. disclose all of the subject matter as described above except for specifically teaching an out-of-band portion including out-of-band subcarriers that are not used for data transmission by communication devices complying with said legacy communication standard and wherein at least some data is encoded in out-of-band subcarriers at frequencies between frequencies allocated to the at least two adjacent transmit channel.

However, Thomson et al. in the same field of endeavor teach an out-of-band portion including out-of-band subcarriers that are not used for data transmission by communication devices complying with said legacy communication standard **(3.5 MHZ interpreted to be out-of-band component) (figures 1b and 4, par 0006, lines 14-17)** and wherein at least some data is encoded in out-of-band subcarriers at frequencies between frequencies allocated to the at least two adjacent transmit channel **(in par 0013, Thomson et al. disclose that long symbols can be modified between the transmitter and receiver (modifying the long symbols in figure 4a between transmitter and receiver interpreted to be not used for data transmission by communication devices complying with said legacy communication standard)).** Thus, it is obvious that preamble representation of figure 4a cab be used as a **modified preamble for transmission between a transmitter and receiver) (par 0006, 0013 and 0039)**. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use out-of-band component (3.5 MHz) as

taught by Thomson et al. to modify the system and method of Perahia et al. in order to prevent interference between channels.

Regarding claim 51:

As shown in figures 1-6, Perahia et al. discloses a method of transmitting an extended mode packet intended for extended 802.11 receivers in a wireless medium, the method comprising:

- transmitting a modified preamble, the modified preamble comprising data transmitted on subcarriers considered by conventional 802.11 receivers (**figure 2**), the modified preamble (**see figures 5 and 6**) comprising a plurality of fields (**figures 5 and 6 shows plurality of fields**) decodable by a conventional 802.11 receiver such that a conventional 802.11 receiver (**figure 2**) that receives the packet can detect the packet or defer processing for a time corresponding to a remainder of the length of the packet (**figure 1, col 6, lines 22-57**); and
- transmitting a remainder of the extended mode packet (**col 6, lines 22-57**).

Perahia et al. disclose all of the subject matter as described above except for specifically teaching out-of-band subcarriers and unused for data transmission.

However, Thomson et al. in the same field of endeavor teach out-of-band subcarriers and unused for data transmission (**3.5 MHZ interpreted to be out-of-band component**) (**figures 1b and 4, par 0006, lines 14-17**) (in par 0013, Thomson et al. disclose that long symbols can be modified between the transmitter and receiver. Thus, it is obvious that preamble representation of figure 4a can be used as a modified preamble for transmission between a transmitter and receiver. See par

Art Unit: 2611

0013 and 0039). Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use out-of-band component (3.5 MHz) as taught by Thomson et al. to modify the system and method of Perahia et al. in order to prevent interference between channels.

Regarding claims 53 and 63:

Perahia et al. disclose all of the subject matter as described above except for specifically teaching wherein the out-of-band subcarriers comprise subcarriers in addition to the 52 non-zero subcarriers utilized by conventional 802.11a receivers for 20 MHz transmission.

However, Thomson et al., in the same field of endeavor, teaches wherein the out-of-band subcarriers **(3.5 MHZ interpreted to be out-of-band component) (figures 1b and 4, par 0006, lines 14-17)** comprise subcarriers in addition to the 52 non-zero subcarriers utilized by conventional 802.11 a receivers for 20 MHz transmission **(figures 1b and 4, par 0006, lines 14-17)**. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use frequency channels (20 MHz) as taught by Thomson et al. to modify the system and method of Perahia et al. in order to transmit information using frequency channels.

Regarding claim 54:

Perahia et al. further disclose wherein said transmitting the remainder of the extended mode packet comprises transmitting the remainder of the extended mode packet **(col 6, lines 22-57)**.

Perahia et al. disclose all of the subject matter as described above except for specifically teaching using said out-of-band subcarriers.

However, Thomson et al., in the same field of endeavor, teaches using said out-of-band subcarriers **(3.5 MHZ interpreted to be out-of-band component) (figures 1b and 4, par 0006, lines 14-17) (figures 1b and 4, par 0006, lines 14-17)**. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use frequency channels (20 MHz) as taught by Thomson et al. to modify the system and method of Perahia et al. in order to transmit information using frequency channels.

Allowable Subject Matter

8. 11-12 are allowed
9. Claims 9 and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, Perahia et al. does not teach or suggest channels a portion of each channel that is attenuated by conventional 802.11 a communication devices.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KABIR A. TIMORY whose telephone number is (571)270-1674. The examiner can normally be reached on 8:00 AM - 4:30 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kabir A Timory/
Examiner, Art Unit 2611